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REVIEW

IRRITABLE PHYSICIANS

Hubert Steinke, *Irritating Experiments: Haller's Concept and the European Controversy on Irritability and Sensibility, 1750–1790*. Amsterdam, New York NY: Rodopi, 2005. Pp. 364. €75.00 US$94.00 HB.

By Marc J. Ratcliff

In 1753, the publication of Albrecht von Haller's *De partibus sensibilis et Irritabilibus* triggered a European controversy over animal physiology. This episode is known to historians of science, thanks in particular to the work of François Duchesneau, Roselyne Rey, and Maria Teresa Monti. While most of these authors have adopted the methodology associated with the history of ideas, Hubert Steinke's book proposes reinterpreting this story, taking into account the changes in methodology introduced by the rise of social studies in the history of science.

Steinke's well documented book is divided into two parts: the origin and evolution of Haller's new concept, followed by the reception of Haller's ideas across Europe. The first part discusses the emergence and development of the concept of irritability, including not only its origins but also the experiments performed by Haller and his pupils at Göttingen. Haller inherited much from the Dutch mechanistic school of Boerhaave, but he emphasised the importance of animal experimentation much more than did his contemporaries. Steinke follows the path of the new concept of sensibility and irritability step by step and discusses the different experiments performed, including Haller's method of vivisection. In Göttingen, Haller and his pupil Johann Georg Zimmermann repeated their experiments on several different animals, such as frogs and dogs. The second part of the book discusses the reception of Haller's ideas, mapping the European correspondents and researchers, who also repeated his experiments and entered into debate with him. In this part, Steinke seeks out what he considers

to be representative modes of reception of Haller's concepts. Thus, a section of the book deals with the different theoretical fields linked to Haller's influence on medical philosophy. Steinke identifies several sorts of mechanism, animism and vitalism which he considers as so many different fields of research. Most of the relevant experiments that he has located took place in the German and northern Italian lands, in Switzerland and France, and in the Dutch Republic. Anti-Hallerians raised several arguments against his theory, mostly dealing with the methodology.

Haller's theory met with strong resistances, and the diversity of medical cultures in Europe is among the factors that hindered the acceptance of his ideas. Many of the physicians who practised in other countries, such as François Boissier de Sauvages, Domenico Vandelli, Adrian van Royen, and Felice Fontana did not share Haller's physiological and pathological knowledge or his experimental know-how. Furthermore, the debates on irritability involved not only physicians and surgeons, but also met with a strong echo in the public sphere, with many journals discussing the issue of irritability. Although journals were developing a culture of criticism at this time, they could sometimes serve to confuse the issue, as there was no general acceptance of who was to be counted as a legitimate expert in this debate: exclusively the physicians who performed the experiments, or anyone who put pen to paper? Thus, in the absence of any unified well defined public sphere, the debate was characterised by the heterogeneity of the contributions.

Steinke's book raises many historical and epistemological issues. He explores the paradox that Haller was regarded as an intellectual leader and yet a significant portion of his contemporaries rejected his ideas. Steinke has tried to characterise the factors that determined Haller's research and the debates that followed. The controversy touched many levels of science: facts, theories and methods; but Steinke distances himself from the idea – what might be called the 'classical' interpretation – that Haller led a revolution in physiology. Nevertheless, he admits that Haller exerted a strong influence on the medical field that transformed the sphere of contemporary pathological and physiological concepts. Thanks to him, the conception of bodily activity replaced the traditional interpretation of mechanism. But Haller's concept was in part rejected or misinterpreted, an observation inconsistent with the status he quickly attained as a reformer of physiology. According to Steinke,

a reason for this paradox is that Haller's detailed and controlled physiological experiments as well as the scientific discourse he developed around them were actually not accepted. Haller did not view physiology as an ancillary science and his methodology emphasised the physiological complexity of the body. Steinke presents Haller as an experimenter who was too demanding for his own time, operating within the context of generally accepted standards for experimental knowledge that did not match up to his own more stringent requirements. In pursuing this question of standards for experimental science, Steinke turns to nineteenth-century physiology and compares Haller's context of the Republic of Letters with that of Claude Bernard in a later period. In the second half of the nineteenth century, scientists like Bernard were more specialised, operated according to more exacting shared standards, and, according to Steinke, came closer to Haller's ideal of scientific investigation. One might wonder what purpose these references to nineteenth-century physiologists like François Magendie, Claude Bernard, Johannes Müller, and Albert Kölliker serve for Steinke, apart from introducing a kind of negative explanation of 'what Haller's context was not' and a sense of the *longue durée* that is perhaps not necessary to capture an understanding of Haller's work. Nevertheless, Steinke is right to emphasise the importance of establishing standards for the sharing of scientific activity within a community. The big question is, however, how these standards were instituted.

For this book, the author has adopted a sort of pluralist epistemology, in which ideas and the social construction of knowledge are represented as being at work both in the laboratory and within the network of scientists under consideration. In his own description, he presents his work as being an 'intellectual or social history of ideas'. He rightly points out that a scholar's thought is not a fixed icon, but is constantly developing. Steinke follows Ian Hacking's lead when he describes a science made from the intertwining of theoretical and practical elements, although at this point one may ask where the social processes have gone. Nevertheless Steinke is consistent with his declared epistemology and his analysis describes the interaction between conceptual developments and experimental practices. The 'manual-reflective process' that he adopts from the work of David Gooding to explain the performance of experiment is very attractive. All the same, it is not clear

what role it plays in the development of Haller's experimental skills and ideas. Moreover, there are perhaps few activities more 'manual-reflective' than writing, but Steinke does not really discuss this aspect of Haller's work. Indeed, as with Larry Holmes's work on Lavoisier's laboratory notebooks, Monti's studies on Haller have shown the importance of the scientist's writing skill with respect to his laboratory activity. Thus, I wonder whether a model that merely distinguishes practice from ideas – and sometimes mixes them up together – allows one to understand the complexity of laboratory activity.

Overall, this book follows and describes in detail the experiments and the emergence – although perhaps not the construction – of new practices and ideas, and presents the reception of Haller's work in a comprehensive form. As such, it is an important contribution to the history of eighteenth-century medicine.

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